A Pole

The present invention relates to a post, especially, but not exclusively, a post that can be used, for example, in traffic signs, streetlights, traffic lights and various signposts.

Posts for such purposes are manufactured from many different materials and are generally hollow for many reasons, such as saving material. Various kinds of metal post appear to be the most commonly used. Other alternatives include posts made from reinforced and other plastics. Wooden posts are also in general use.

Posts supporting different kinds of electically operated devices, such as traffic lights or lighting devices in general, or other devices to which data or even only current must be led, require the addition of suitable wiring to conduct signals or current. Conventionally, this is achieved by leading suitable wiring into the post from below, and connecting it to wiring inside the post by means of an access plate in the post. This plate is generally large and significantly reduces the durability of the post.

This invention is intended to create a post, in which some or all of the above detriments have been eliminated, achieving a prefabricated, highly adaptable type of post for very many different applications.

The above and other benefits and advantages of this invention are achieved in the manner described as characteristic in the accompanying Claims.

The invention is next described by reference to the accompanying drawings, which illustrate practical applications of the best embodiments of the invention.

Thus, Figure 1 shows a cross-section of one embodiment of a post according to the invention, and

Figure 2 shows one possible arrangement of the connection between a post according to the invention and external devices.

Thus, Figure 1 shows a non-scale diagram of the cross-section of a post 1 according to the invention. The post is specifically hollow, and so contains a longitudinal hollow core 2. The basic construction of the post is double, with an inner layer 3 and an outer layer 4. The thicknesses of these layers 3 and 4 may differ completely from to those shown in the figure. The most likely wall thicknesses are obviously less than those shown.

In this application, the invention is illustrated by a double-layered construction, which, however, is in no way essential. The situation would be absolutely identical, if there were only one layer, or if more layers were added to make three or more.

Figure 1 shows exaggerated enlargements of five places where the basic concept of the invention, i.e. a preinstalled lead or wiring harness 5, can be located according to the invention. It is highly probable that only one or two of the locations referred to above will be used, with, for example, one wiring harness located on one side of the post and the other on the other side, so that wiring 5 can be in the same, or a different position in relations to layers 3 and 4 of the post.

Therefore, wiring can be located on the inner surface of the tube-like post, within the inner layer 3, on the interface of layers 3 and 4, in the outer layer 4, or on the surface of the outer layer 4. In a single-layer construction, there are naturally only three locations, on the surfaces of, or within the layers. The location depends to a great extent on the material of the post. It is obvious, that, if a metal tube is used for the post, it will not be technically feasible, or at least sensible, to place the wiring within this kind of layer. However, if plastic materials are used, it will be easy to place the wiring inside a layer.

On the other hand, there are many cases, in which it is inappropriate to locate the wiring at the same point within the cross-section over the entire length of the post. Thus, in such cases, the wiring can move from one location to another. For example, the wiring may be placed between two layers in the upper part of the post, and move to the inner surface in the lower part. Depending on the situation, the transfer may be inwards or outwards, or even vary, as required. In one possible alternative, the wiring may form a spiral or other non-linear structure around the post.

It should be noted at this stage that a 'layer' is a very vague concept in this invention, and that, for example, a situation, in which wiring is pre-attached by a tape-like layer to the outer surface of the post, will fall within the invention's scope of protection. The above reference is intended to extend the scope of protection to very thin layers too.

As stated above, the construction of the post may, in practice, vary very greatly. One example of a construction may have a single plastic layer reinforced by a suitable laminating method and placed on top of a suitable inner layer 3, so that the wiring harness, suitably protected by the outer layer, lies in the interface of the two layers. The inner layer can be made from almost any material, for example, celluar plastic, as it is mainly intended as a base for the formation of the outer layer. Naturally, the inner layer may even be a metal tube. Any reinforcement known to the art, such as glass or other fibres, fabric, netting or similar can be added to the layers to reinforce them. As stated above, there may be several layers, when their materials and manners of manufeture may vary according to the prevailing requirements.

Figure 2 shows diagrammatically how a post according to the invention can be prefabricated, so that connector 6, to which the leads 5 are attached is placed in the lower section of post 1. On the other hand, there may be several connectors, connecting to different wiring harnesses, when the connector corresponding to the current requirements is guided into connector 7 in base 8, which may be of any type and shape whatever, to which leads 9 are led from outside. If there are several connectors 6 within the post, a suitable connector is guided to connector 7 by turning the post, so that the connectors it is intended to join are opposite one another, and then pushing the post into the base. A rotating movement can also be used, for example, to bring the connectors into proper contact with each other. As such, the connectors may be of any known type at all. In Figure 2, the leads are shown as being brought into the inner core of the post through a hole 10 in the wall of the post, for example, from the space between layers 3 and 4.

Instead of wiring being installed directly in the post to take a signal or similar from one point to another, the basic idea of the invention also includes the alternative that, in place of the wiring, an instrument or instruments can be located in the post, by

means of which a lead can be easily and quickly set in place. In practice, such a feed-through device is usually a tube, inside which the wiring can be pushed. Though a plastic tube with a circular cross-section is usually the cheapest and most suitable alternative, it is obvious that the shape of the tube or similar is of no significance. What is important, however, is that the device forms a suitable, easily used channel for the incoming wiring.

The arrangement described above avoids the need to make hatches in the cover of the post. Installation is easy and quick. The invention can also be easily adapted to posts that are not of a single diameter, but which taper conically evenly or narrow in steps. The latter model is in quite general use, particularly in lampposts. In this case, the post is made by joining together sections of metal piping with decreasing diameters. Particularly in this situation, the outer layer is unified throughout the entire length of the post. The outer layer can be made, for example, from a suitable plastic material.

All in all, it is believed that a prefabricated post according to the invention brings significant advantages compared to the posts that are in use at present. In a post according to the invention has the additional advantage that, if necessary, the wiring is extremely well protected. The permanence of the protection can be increased by selecting a suitable material.